

What is claimed is:

1. A method of augmenting rejection of cells by a subject, the method comprising administering to the subject an effective amount of a pharmaceutical composition comprising a D isomer of an inhibitor of indoleamine-2,3-dioxygenase.
2. The method of claim 1 wherein the inhibitor of indoleamine-2,3-dioxygenase is selected from the group of 1-methyl-D-tryptophan,  $\beta$ -(3-benzofuranyl)-D-alanine,  $\beta$ -(3-benzo(b)thienyl)-D-alanine, and 6-nitro-D-tryptophan.
3. The method of claim 2 wherein the inhibitor of indoleamine-2,3-dioxygenase is 1-methyl-D-tryptophan.
4. The method of claim 1 wherein the cells are tumor cells.
5. The method of claim 4, wherein the tumor cells are a cancer selected from the group consisting of melanoma, colon cancer, pancreatic cancer, breast cancer, prostate cancer, lung cancer, leukemia, brain tumors, lymphoma, sarcoma, ovarian cancer and Kaposi's sarcoma.
6. The method of claim 1 further comprising administering one or more chemotherapeutic agents to the subject.
7. The method of claim 6 wherein at least one chemotherapeutic agent is selected from the group consisting of cyclophosphamide, methotrexate, fluorouracil, doxorubicin, vincristine, ifosfamide, cisplatin, gemcytabine, busulfan, ara-C, and combinations thereof.
8. The method of claim 1 wherein the pharmaceutical composition further comprises at least one chemotherapeutic agent.

9. The method of claim 8 wherein at least one chemotherapeutic agent is selected from the group consisting of cyclophosphamide, methotrexate, fluorouracil, doxorubicin, vincristine, ifosfamide, cisplatin, gemcytabine, busulfan, ara-C, and combinations thereof.

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10. The method of claim 1 further comprising administering radiation therapy.

11. The method of claim 1 further comprising administering total body irradiation.

10 12. The method of claim 1 wherein the pharmaceutical composition is administered following bone marrow transplantation or peripheral blood stem cell transplantation.

13. The method of claim 1 wherein the cells are infected by a virus, an intracellular parasite, or an intracellular bacteria.

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14. The method of claim 13 wherein the virus is human immunodeficiency virus or cytomegalovirus.

15. The method of claim 13 wherein the intracellular parasite is selected from the group consisting of *Leishmania donovani*, *Leishmania tropica*, *Leishmania major*, *Leishmania aethiopica*, *Leishmania mexicana*, *Plasmodium falciparum*, *Plasmodium vivax*, *Plasmodium ovale*, and *Plasmodium malariae*.

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16. The method of claim 13 wherein the intracellular bacteria is selected from the group consisting of *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Listeria monocytogenes*, and *Toxoplasma gondii*.

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17. The method of claim 1 wherein the pharmaceutical composition is administered in combination with a cytokine.

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18. The method of claim 17 wherein the cytokine is granulocyte-macrophage colony stimulating factor (GM-CSF) or flt3-ligand.

19. The method of claim 1 wherein the pharmaceutical composition further comprises a cytokine.

20. The method of claim 1 wherein the pharmaceutical composition is administered in combination with a vaccine.

21. The method of claim 20, wherein the vaccine is a tumor vaccine.

22. The method of claim 21 wherein the tumor vaccine is a melanoma vaccine.

23. The method of claim 21 wherein the tumor vaccine comprises genetically modified tumor cells.

24. The method of claim 23 wherein the genetically modified tumor cells are transfected with granulocyte-macrophage stimulating factor (GM-CSF).

25. The method of claim 20 wherein the vaccine comprises one or more immunogenic peptides.

26. The method of claim 21 wherein the tumor vaccine comprises dendritic cells.

27. A method of stimulating an immune response comprising administering an effective amount of a pharmaceutical composition comprising a D isomer of an inhibitor of indoleamine-2,3-dioxygenase.

28. A method of enhancing the signal in a mixed leukocyte response (MLR) comprising adding an effective amount of a D isomer of an inhibitor of indoleamine-2,3-dioxygenase.

29. A method of increasing T cell activation by an antigen-presenting cell comprising administering an effective amount of a pharmaceutical composition comprising a D isomer of an inhibitor of indoleamine-2,3-dioxygenase.
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30. A method of reversing the immunosuppressed state in a subject with HIV, the method comprising administering to the subject an effective amount of a pharmaceutical composition comprising a D isomer of an inhibitor of indoleamine-2,3-dioxygenase.
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31. A method of treating a subject with an infection, the method comprising administering to the subject an effective amount of a pharmaceutical composition comprising a D isomer of an inhibitor of indoleamine-2,3-dioxygenase.
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32. The method of claim 31 wherein the infection is selected from the group consisting of an infection with the HIV virus, infection with a CMV virus, infection with an intracellular parasite, and infection with a bacteria.
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33. The method of claim 31 wherein the pharmaceutical composition is administered in combination with a vaccine.
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34. The method of claim 33 wherein the vaccine is an anti-viral vaccine.
35. The method of claim 33 wherein the vaccine is against HIV.
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36. The method of claim 33 wherein the vaccine is against tuberculosis.
37. The method of claim 33 wherein the vaccine is against malaria.
38. A method of reducing immunosuppression in a subject, wherein said immunosuppression is mediated by an antigen presenting cell, and wherein said antigen presenting cell expresses indoleamine-2,3-dioxygenase (IDO), the method comprising administering to

the subject an effective amount of a pharmaceutical composition comprising a D isomer of an inhibitor of indoleamine-2,3-dioxygenase.

39. A method of preventing the development of immunosuppression in a subject, wherein  
5 said immunosuppression is mediated by an antigen presenting cell, and wherein said antigen presenting cell expresses indoleamine-2,3-dioxygenase (IDO), the method comprising administering to the subject an effective amount of a pharmaceutical composition comprising a D isomer of an inhibitor of indoleamine-2,3-dioxygenase.

10 40. The method of claim 38, wherein said subject has undergone a bone marrow transplant.

41. The method of claim 39, wherein said subject has undergone a bone marrow transplant.

15 42. A method of delaying the relapse or progression of a tumor in a subject, the method comprising administering an effective amount of a pharmaceutical composition comprising a D isomer of an inhibitor of indoleamine-2,3-dioxygenase.

20 43. A method of treating a subject suffering from a neoplastic condition, the method comprising administering to the subject an effective amount of a pharmaceutical composition comprising a D isomer of an inhibitor of indoleamine-2,3-dioxygenase.

44. A pharmaceutical composition comprising a D isomer of an inhibitor of indoleamine-2,3-dioxygenase and at least one additional therapeutic agent.

25 45. The pharmaceutical composition of claim 44 wherein the inhibitor of indoleamine-2,3-dioxygenase is selected from the group of 1-methyl-D-tryptophan,  $\beta$ -(3-benzofuranyl)-D-alanine,  $\beta$ -(3-benzo(b)thienyl)-D-alanine, and 6-nitro-D-tryptophan.

30 46. The pharmaceutical composition of claim 44 comprising 1-methyl-D-tryptophan.

47. The pharmaceutical composition of claim 44, wherein at least one additional therapeutic agent is an antineoplastic chemotherapeutic agent selected from the group consisting of cyclophosphamide, methotrexate, fluorouracil, doxorubicin, vincristine, ifosfamide, cisplatin, gemcytabine, busulfan, ara-C, and combinations thereof.